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Department of Transportation  
National Highway Traffic Safety  
Administration

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**A Guide to Audiovisual  
and Print Materials on  
Safety Belts and  
Child Car Safety Seats**

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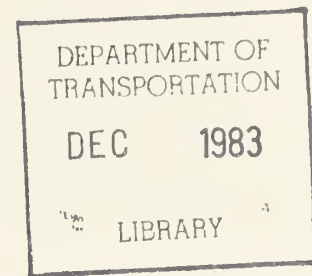
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## Introduction

The audiovisual materials described in this guide illustrate three major occupant protection concepts:

- (1) The Dynamics of the Crash
- (2) The Effectiveness of Safety Belts or Child Car Safety Seats
- (3) Myths and Misconceptions Related to the Use of Occupant Protection Devices.

See next page for a listing by concept. Items for presentation should be selected according to the time available and the interests of the audience. However, whenever possible, select the films that contain aspects of all three major concepts. It is suggested that the slide packages be

used in follow-up presentations, either on child safety seats or safety belts.

Each film or slide guide is designed to assist in selecting the materials that are most appropriate for the audience or situation. In addition, suggested presentation questions and answers have been provided.

This document describes all of the audiovisual materials selected by the National Highway Traffic Safety Administration (NHTSA) for inclusion in various educational program kits. Although a particular kit may contain a few of these materials, the others may be obtained directly from NHTSA or the original producers listed on the last page of this guide.

## Audiovisual Materials Listed by Concept Categories

	<b>Dynamics</b>	<b>Effectiveness</b>	<b>Dynamics, Effectiveness Risk, Myths, &amp; Misconceptions</b>	<b>Review Materials</b>
Safety Belts	"Dynamics of a Crash"	"Safety Belts Save Lives" "Egg," "Headache"	"Are You Convinced?" "Risk" "Safety Belts and You" "Pumpkin" "Rediscover the Safety Belt"	"Safety Belts: Fact & Fiction"
Child Passenger Safety	"Children and Infants in Car Crashes"		"Child Restraints"	"Childsafe"
Pre-Driving Age Audiences				
Grades pre-school to 4		"Otto The Auto—Buckle-Up"		
Grades 2-8		"Lucky 13"		
Grades 4-9		"Do You Buckle-Up?"		

## Overview of Audiovisual Materials

Title	Running Time	Description or Appropriate Audience
<b>Safety Belts</b>		
● "Egg"	30 seconds	Effectiveness
● "Pumpkin"	30 seconds	Myths ("thrown clear")
● "Headache"	30 seconds	Dynamics, Effectiveness
● "Dynamics of a Crash" (DOC)	3 minutes	Dynamics
● "Safety Belts Save Lives" (SBSL)	2 minutes	Effectiveness
● "Safety Belts and You" (SBAY)	8 minutes	Dynamics, Effectiveness, Myths
● "Are You Convinced?" (AYC)	5 minutes	Dynamics, Effectiveness, Myths
● "Safety Belts: Fact and Fiction" (SBFF)	12 minutes	Review (sound and slides)
● "Risk"	2 minutes 20 seconds	Probability of being in a crash
● "Do You Buckle-Up?"	8 minutes	Grades 4-9 Myths & Misconceptions
● "Otto the Auto—Buckle-Up"	5 minutes	Grades K-4, Effectiveness
● "Rediscover the Safety Belt"	8½ minutes	General Appeal for safety belt use
● "Lucky 13"	15 minutes	Youth audience (7-13 years)
<b>Child Car Safety Seats</b>		
● "Children and Infants in Car Crashes" (CICC)	5 minutes	Dynamics, Effectiveness (silent)
● "Child Restraints" (CR)	3 minutes	Review
● "Childsafe" (C)	10 minutes	Review (sound and slides)

NOTE: Unless otherwise noted, all items are on 16mm film, in color, and sound. Some may also be available on ¾" video tape or 8mm continuous loop films.

## Suggestions

### Before Presentation

1. Choose films according to the audience and equipment and time available.
2. Contact the State Highway Safety Agency to obtain any brochures or other handout material they may have on safety belts or child safety seats. If materials are unavailable, consider reproducing the "Safety Belt Fact Sheet" or the Types of Safety Seats." (See Appendix.)
3. Assemble needed materials and check equipment for proper functioning.
4. Check viewing room for darkness, location of electrical outlets, and optimal seating arrangements.
5. Read all handout materials and film guides.
6. Be prepared for questions by reviewing reference material, particularly the answers to the Safety Belt Quiz. (See Appendix.)

### During Presentation

1. State objectives of the presentation.

2. Survey audience for those who have been in automobile accidents.
3. Survey audience for users and non-users of occupant restraints.
4. Ask for reasons of non-use or use. List these for follow-up discussion at end of the presentation.
5. Use selected preview questions to stimulate interest in the film or slide presentation.
6. Use Safety Belt Quiz to reinforce the presentation. (See Appendix.)

### After Presentation

1. Summarize.
2. Reinforce the presentation using the film or slide guide review questions.
3. Evaluate. Determine shift in viewer's attitudes and beliefs by referring back to reasons for use and non-use of safety belts.
4. Distribute any handout materials.



## Presenter's Guide

1. The following important points, which are covered in the films, should be further discussed and reiterated.
  - In any given accident, there are two collisions.
  - The first is the vehicle collision.
  - The second, more important collision, is the “human collision.”
  - The human collision is the one that can hurt.
  - Occupant protection devices, safety belts or child car safety seats, protect a person in the human collision.
  - Safety belts or child car safety seats keep a person from colliding with the vehicle's interior or with other people in the car.
  - Proper adjustment of safety belts is very important. The lap belt should be worn low on the hips, not over the stomach.
  - For upper body protection, the shoulder belt must be worn across the torso.
2. In your discussion, these points should be covered:
  - If every driver and passenger in the U.S. riding in passenger cars, vans, or light trucks wore safety belts during every trip, in one year;
    - 17,000 lives would be saved;
    - 320,000 moderate-to-severe occupant injuries could be prevented; and
    - \$20 billion in accident costs would be saved.
  - Chances of being in an accident are high
    - last year, almost 30 million drivers were in traffic crashes—about one of every five licensed drivers.
    - there's a one in three chance that a person will be in a crash sometime during their driving career.
  - By failing to wear safety belts, if a person is in a crash, the chances of being severely injured or even killed are increased greatly.
  - Even in a “near miss” accident, an unbelted driver could be thrown out of position and lose control of the car.
  - In a severe crash, there may be some injuries caused by safety belts but they will be far less serious than those that would have resulted without safety belts.
  - Safety belts can help car occupants escape from a burning or sinking car. Belts don't trap people, if a person is involved in a crash and not wearing a safety belt, he or she might be stunned or knocked unconscious by striking the interior of the car. Less than half of one percent of all injury producing collisions involve fire or submersion.
  - Being thrown free is 25 times more dangerous . . . 25 times more lethal than remaining inside the vehicle.
  - Eighty percent of deaths and injuries occur in cars traveling under 40 miles per hour.
  - Seventy-five percent of deaths and injuries resulting from crashes occur less than 25 miles from a person's home.





## Egg, Pumpkin and Headache

### “EGG”

*Objective:* To convey the idea that safety belts prevent you from colliding with the inside of your car in a crash.

*Concept Best Illustrated:*

Effectiveness of being restrained as opposed to unrestrained.

### “PUMPKIN”

*Objective:* To demonstrate, abstractly, what happens when one is ejected in an accident.

*Concept Best Illustrated:*

Myths: Importance of remaining in a car during a crash rather than being ejected.

### “HEADACHE”

*Objective:* To emphasize the necessity of wearing lap and shoulder belts.

*Concept Best Illustrated:*

Effectiveness of lap and shoulder belts.

*Target*

*Audiences:* General public

*Materials:*

16 mm sound projector, screen

*Running Time:*

30 seconds each

### Abstract

This reel contains three 30-second public service announcements designed to catch the viewer's attention and to make a point quickly. Two of the films, “Pumpkin” and “Egg,” use abstract notions to make a point. “Headache” contains sequences from the Chrysler test sled footage.

“EGG” shows a metal box with an egg inside. The narrator drops the box, and when it is opened, the egg is broken. The narrator explains that this is what happens when you ride unbelted in a car. A strip of tape is then put across the egg to secure it to the box. When the narrator drops the box a second time, the egg remains securely fastened to the box. Narrator states that chances of injury are reduced by 70 percent when you wear your safety belt. (He closes by saying, “If you're not wearing a safety belt, what's holding you back?”)

“PUMPKIN” is for all those who think it is better to be thrown clear of the car when you have an accident. A pumpkin smashes into the pavement, splits when it hits a post, and rolls into the path of an oncoming truck. The narrator uses the pronoun “you” when describing what is happening to the pumpkin. (Narrator closes with, “If you aren't wearing your safety belt, what's holding you back?”)

“HEADACHE” shows a dummy totally restrained and avoiding serious injury in an accident. Second clip shows dummy's head smashing into dashboard because it is only secured by a lap belt. Last sequence shows dummy's face smashing into windshield while narrator says, “We know using a seat belt can be a headache, but look at it this way, your headache could be a lot worse.”

### Summary

Objectives are met by giving essential and impressive information in a succinct manner.

### Possible Limitations of the Film

These are 30-second films that are designed to make a point quickly in a very few words. You may find that the main thrust is lost on a few people because of the rapidity with which the information is given. In addition, all are very visual, which may cause the viewer to retain less of the narration. To reinforce the points made, discussion before and after each viewing is essential.

### Preview or Review Questions

1. Why do you need to be restrained when riding in a car?
  - A. To prevent you from hitting the hard surfaces on the inside of the car at the time of impact in a crash.

2. What do you think are the chances of being thrown clear in an accident and avoiding injury?

A. Your chances of being fatally injured are up to 25 times greater if you are thrown from the car. Why? Because (1) you could be ejected through the windshield or the side window and (2) your landing spot may not be soft ground.

3. Are safety belts more trouble than they're worth?

A. A tally of the results of actual highway crashes, including injury and death figures among wearers and nonwearers, reveals that safety belt usage could reduce serious injuries by 320,000 each year. An estimated 17,000 lives are lost that could be saved by safety belts. *Those figures take into account any improper functioning or any injuries inflicted by safety belts.*

## DID YOU KNOW

- That every week about 900 people are killed in motor vehicle accidents?
- That your chances of being killed are much, much greater if you are thrown from the car? (Twenty-five times greater.)
- That less than  $\frac{1}{2}$  of 1 percent of all accidents result in fire or submersion of the vehicle?
- That by wearing only the lap belt, versus the lap and shoulder belt, your protection decreases by 20 percent?

## “Dynamics of a Crash”

*Objective:* To show what happens to vehicle and unbelted occupant in a head-on collision.

*Concept Best Illustrated:* Dynamics: What happens in a crash.

*Target Audience:* General public

*Materials:* 16 mm sound projector, screen

*Running Time:* 2 minutes, 30 seconds

### Abstract

The narrator in a test studio says, “Here’s what happens when you’re in a crash,” as a split-second crash occurs against a test barrier. After showing the test dummies’ size and likeness to the human body, the same crash is shown in slow motion. It is filmed from both interior and exterior of the vehicle, and shows the dummies crashing into the windshield and dashboard. The narrator then makes an analogy of the barrier with a pole, a tree, or another vehicle.

Narrator concludes by demonstrating with his hands how the belts slow down the bodies of the occupants at impact. The scene closes here with narrator saying that safety belts can save lives only if they’re worn.

### Summary

Objective is met by showing one crash from different perspectives and by limiting statistical information to that related to head-on collisions.

### Possible Limitations of Film

This film is not intended to be used alone. Rather, it should be used first to set the stage for the need for some occupant protection. It can be followed by a film showing such a device, e.g.:

“Safety Belts Save Lives,” or  
“Safety Belts and You.”

### Preview or Review Questions

1. In every crash there are two collisions. What are they?

A. The two collisions are: the actual crashing of the car into external object—the vehicle collision—and the crashing of the occupants against interior portions of the

car—the human collision. The inside of the car has hard, unyielding surfaces which the occupant strikes with tremendous force as the body continues to move at the same speed that the vehicle was moving.

2. How fast does the accident happen?

A. A car going 30 mph comes to a complete stop upon impact in  $\frac{1}{10}$ th of a second. The occupants of the vehicle come to a complete stop  $\frac{1}{50}$ th of a second later.

3. Can you be seriously injured even if the passenger compartment stays completely intact?

A. The majority of injuries are caused by the human collision, i.e., the occupants hitting some part of the inside of the vehicle after vehicle impact. Therefore, the structural integrity of the passenger compartment has less to do with reducing injuries in low-speed crashes than do safety belts.

4. How helpful is a padded dash and instrument panel in reducing injury?

A. The forces involved in a collision are so strong, that a padded dash would offer little to no protection to occupants in speeds over 10 mph.

5. With what force does the occupant hit the inside of the car?

A. A *rough estimate* of the force with which the occupant collides with the interior of the car can be obtained by multiplying the weight of the occupant times the speed the vehicle was traveling at the instance of the crash. In a 30-mph crash, a 10-pound baby would hit the dash with 300 pounds of force.



6. Why is crash testing done?

A. Crash testing is done to find out exactly what forces are unleashed in an auto crash. By collecting data from these tests, standards of crashworthiness can be set and regulations regarding safety belt usage can be recommended.

**Did You Know**

- That an occupant in a 30 mph collision hits the interior of the car with the same force with which a body would hit the pavement after falling from a three-story building?
- That fatalities have occurred at speeds as low as 12 mph, the speed you would normally drive in a parking lot?
- That crash dummies are anthropomorphic? This means that their weight distribution is patterned after that of a human body. The dummies are equipped with instruments to measure the amount of injury a human being would be likely to sustain.
- That lap and shoulder belts are *at least 57 percent* effective in preventing serious injury and deaths in a crash?



0.000 seconds—car hits barrier



0.100 seconds—car stops



0.120 seconds—person hits car interior

## “Safety Belts Save Lives” (Chrysler)

<b>Objective:</b>	To emphasize the necessity of wearing both lap <i>and</i> shoulder belts.	<b>Target Audience:</b>	General public
<b>Concept Best Illustrated:</b>	Effectiveness of lap only and lap and shoulder combination.	<b>Materials:</b>	16 mm sound projector, screen
		<b>Running Time:</b>	2 minutes

### Abstract

Scene opens with graphic sign saying, “You bought them—Wear them,” and breaks into a scene in the test studio where Chrysler employees are beginning the crash testing. We see a technician in a control booth watching crash sled back up to assume starting position. Three crashes at 30 mph are filmed from inside the crash sled.

—First crash shows *unrestrained* dummy in slow motion and hitting windshield. Same crash shown again at  $\frac{1}{5}$ th true speed to dramatize the speed in which accidents occur.

—Second crash shows dummy in slow motion, wearing only a *lap belt*. Dummy hits dash. Same crash is repeated at  $\frac{1}{5}$ th true speed.

—Third crash shows dummy wearing both *lap and shoulder belts* and sustaining no apparent injuries. Shown again at  $\frac{1}{5}$ th speed.

Narrator asks which you would rather have: this—(restrained by shoulder and lap belts); this—(lap belt only); or this—(dummy’s head goes through windshield). Closing: The choice is yours. Lap and shoulder belts save lives.

### Summary

This film very graphically illustrates the effectiveness of safety belts by showing what happens when occupants are (a) properly belted, (b) lap-belted only, and (c) totally unrestrained. The  $\frac{1}{5}$ th true speed sequences do much to convince viewers of the rapidity with which accidents happen.

### Possible Limitations of Film

The film is old, but still very effective.

### Preview or Review Questions

1. What response would you give to this statement?  
“My shoulder belt is uncomfortable so I just wear a lap belt. It’s just as good.”

A. As the film shows, some protection is offered by the lap belt. However, serious injuries and disfigurements to the head and face can be avoided by restraining the torso with a shoulder belt.

2. How do occupants get hurt in a crash?

A. In a study to determine the points of impact in auto collision, it was found that 38 percent of the fatalities were caused by impact with the steering wheel and windshield; 20 percent were caused by impact with the windshield frame; and 22 percent were impacts with the side surface interior. In addition, 58 percent of all fatalities result from head and chest injuries.

3. Won’t internal head injuries occur if the head and body are subjected to such high deceleration, even if there is no direct impact?

A. In a British survey, no cases of injury occurring without contact were found. Deceleration forces sufficient to damage the internal organs of a restrained person are likely to cause very severe or fatal injuries to an unrestrained one.

4. Will safety belts keep me from getting whiplash?

A. No. Safety belts alone cannot prevent whiplash. Restraint is afforded by the head restraints on the seat back, rather than the belt.

5. Comment: Most people would have the reflexes to shield their heads from injury by raising their arm. Wouldn’t that reduce injuries substantially?

A. It is true that the crash dummies cannot demonstrate all the normal reflexes a human would have. However, no amount of shielding would reduce the forces unleashed in anything but a *very low* speed crash.

### **Audience Follow-up Activities**

Suggest that individuals begin sharing what they have learned with family and friends. When they get into a car, and especially if they are driving, they should suggest that everyone buckle up.

### **Did You Know**

- That in each year, the number of people in the U.S. that are killed in motor vehicle accidents is about 13 times the number of people who die in all air, rail, and waterborne transportation accidents?
- That motor vehicle accidents are the largest single killer of Americans under the age of 44?
- That motor vehicle crashes are the leading cause of paraplegia and epilepsy?
- That auto crashes cost the country about \$50,000 billion dollars per year?
- That getting car occupants properly protected by safety belts would be the single most powerful thing we can do to dramatically reduce the number of persons injured or killed in automobile crashes?



# “Risk”

## (The Risk of Being Injured in a Crash)

<i>Objective:</i>	To reveal the substantial risk of being injured in a car crash over a lifetime of driving or riding.	<i>Target Audience:</i>	General public
<i>Concept Best Illustrated:</i>	The lifetime probability of being injured in a car crash.	<i>Materials:</i>	16 mm sound projector, screen
		<i>Running Time:</i>	2 minutes, 20 seconds

### Abstract

This film uses a combination of animation and real people discussing the probability of being injured in a car crash. Perhaps the most pervading messages conveyed are that (a) the probability of an injury over a lifetime of driving is approximately 30 percent and (b) the most effective immediate action anyone can take to reduce that probability is to buckle up. Three different persons are shown simultaneously on the screen discussing their skepticism about what their crash risks are and whether or not they can do something about it. Simultaneously animated vehicles are passing over the top of the screen, every third is being “blipped out” much as in a video game.

### Summary

Objective is to show that the probability of being involved in an injury crash over a lifetime is substantial and that the best way to reduce that probability is to buckle up every time you drive or ride in a car.

### Possible Limitations of Film

Film is probably best used after the dynamics of a crash and the effectiveness of safety belts in preventing injuries have been shown.

### Preview of Review Questions

1. How effective are safety belts in reducing moderate to serious injuries in a crash?

A. Most studies suggest that safety belts are 50-60 percent effective in reducing moderate to serious injuries.

2. Are safety belts effective in reducing injuries resulting only from frontal crashes?

A. No, safety belts are very effective in reducing injuries resulting from frontal, rear, side, and rollover crashes.

3. How do safety belts prevent injuries?

A. Safety belts prevent injuries by preventing the “second collision” of the occupant of the vehicle with the dash, steering wheel, windshield, roof, or another occupant. In addition, belts slow down the deceleration of the occupant as the vehicle comes to an abrupt stop.

4. Do Safety Belts cause injuries?

A. In a severe crash, it is very difficult to prevent all injuries. Some may even be caused by the belt itself. However, in every study of such crashes, the number of severe injuries prevented is much larger than the number of injuries caused. So much so that persons wearing belts correctly have nearly 60 percent fewer injuries than persons not wearing belts.

In most cases where injuries are caused by a belt, either the crash occurred at such a high speed that nothing could have mitigated the high energy release caused by the crash or the belt was worn improperly, that is, high on one’s stomach rather than low on one’s pelvis.

5. What’s the best way I can immediately protect myself from being injured in a car crash caused by a drunk driver?

A. The most effective thing you can do right now to reduce your probability of being injured in a car crash is to fasten your safety belt.





## “Rediscover The Safety Belt”

<i>Objective:</i>	To motivate individuals and group leaders to promote safety belt use programs.	<i>Target Audience:</i>	Employers, managers, committees, and associations.
<i>Concept Best Illustrated:</i>	Comprehensive coverage of safety belt issues. Good for persuading leaders of organizations to promote safety belt encouragement programs.	<i>Materials:</i>	16 mm sound projector and screen
		<i>Running Time:</i>	8 minutes, 30 seconds

### Abstract

This 16mm film was produced by NHTSA for the National Safety Belt Use Program. Former Astronaut Wally Schirra provides an authoritative message designed to inform and persuade community leaders, organization managers and executives as to their responsibility to inform and educate their constituents, members, or employees about the need to “rediscover” their safety belts. It was designed to motivate and persuade community leaders to do something about a serious national public health problem. The film includes information on the risks of riding in an automobile, the tremendous forces of a crash, safety belt facts and misconceptions, and how safety belts work. The film also tells community leaders what they can do about the problem. The myths and facts section of this film is uniquely handled by on-the-street interviews with wearers and non-wearers of safety belts who testify about their personal experiences. These interviews are very convincing evidence of the effectiveness of safety belts.

### Preview or Review Questions

1. Are safety belts necessary when taking short trips at low speeds?

Many people believe they are very safe when driving just to the store, the school, or to a friend's house. They do it all the time, and think nothing will ever happen. But a crash or collision can happen at any time or place. All it takes is one driver not paying attention, losing control, or taking an unnecessary risk. Three out of four crashes happen within 25 miles of home.

No one ever starts out in the morning expecting to be in a crash, but it does happen.

How many of you have had a “close call” in the last few weeks?

2. In a crash, is it always safer to be thrown out of the car?

The fact is that your chances of being fatally injured are almost 25 times greater if you're thrown from the car than if you are safely buckled to your seat.

Why? Because it's not easy to get out of the car. You have to go through the windshield or the side windows . . . and that's going to hurt! Once you are out of the car and sailing through the air, you face your next problem . . . your landing spot. But without wings, you really don't have a choice.

So how will safety belts help you? They will hold you snugly in your seat so that you don't

- plunge through the windshield;
- smash into trees or rocks or other cars;
- scrape along the ground or the pavement; or
- get run over by your own or another car.

3. Should belts be fastened just above the hip bones?

A lap belt is designed to be worn as low as possible across the hip bones, so these strong bones can absorb safely the forces of a crash. If the belt is fastened above the hip bones . . . across the abdomen . . . it could cause injury to soft tissue and organs in a severe crash.

4. If people wear a lap belt, do they need a shoulder belt, too?

The purpose of a shoulder belt is to keep your upper torso from jackknifing forward in a collision and hitting

the dashboard or the steering wheel with your chest and face. A lap belt will hold you in your seat and save your life, but the shoulder belt can prevent some very painful and disfiguring injuries.

Never wear a shoulder belt by itself. You will slide under it in a crash and suffer serious injury. The combination of lap and shoulder belts working together provides the greatest protection in a crash.

5. How many injury-producing crashes involve fire or submersion in water?

If you watch television, you probably think cars explode and drop into rivers all the time. But that's just not what happens in real life. Less than one out of every 200 injury-producing crashes involves fire or submersion in water.

But suppose this does happen to you. Then a safety belt can save your life by keeping you unhurt, alert, and able to escape quickly.

Without a safety belt, you easily can be stunned or knocked unconscious in even a minor crash. Then how will you escape?

## “Safety Belts and You”

<b>Objective:</b>	To demonstrate the effectiveness of safety belts in various types of crashes (i.e., roll-over, frontal, rear-end), showing the human collision in every instance.	<b>Target Audience:</b>	General public. Driver education classes
<b>Concept Best Illustrated:</b>	Effectiveness of safety belts. Dynamics: What happens in a crash.	<b>Materials:</b>	16 mm sound projector, screen
		<b>Running Time:</b>	8 minutes, 30 seconds

### Abstract

Scene opens on an auto graveyard. Narrator explains that it is part of Ford Motor Company's testing program.

Narrator tells audience about the use of crash dummies in their testing while scene shows different sizes and types of dummies. A short footage of film from a test done in the 1950's is shown as narrator gives Ford's history in crash test experimentation.

The first crash is of a *car going 30 mph* and crashing into a barrier. The crash is shown in slow motion from inside and from outside of the car while the narrator describes the equipment used in the test.

Crash #2 shows an *angular crash*.

Crash #3 shows an *unbelted occupant* crashing into the windshield, possibly receiving severe neck injuries. (This is important in that the types of injuries received in a frontal crash are very consistent.)

Crash #4 shows *back-seat occupants—one restrained and one unrestrained*—and demonstrates the occupant-to-occupant injuries that can occur.

Crash #5 shows *belted occupants* receiving no injuries when crashing at 30 mph, 30 degrees to the barrier.

Crash #6 shows a *station wagon at 31 mph* crashing at *30 degrees to the barrier*. Occupants are restrained and no one is injured.

Crash #7 shows *small car at 30 mph, 30 degrees to the barrier*. Occupants are restrained and do not sustain injuries.

Crash #8 shows *rear-end crash* with restrained occupants. Car in front absorbs most of the impact.

Crash #9 shows a *roll-over* with unbelted occupants. Front-seat passenger is thrown 150 feet from the car.

(This is a most important scene, since, more than any other A-V material, it shows what “being thrown clear,” or ejected, is really like.

It is important to note also that this film emphasizes the dynamics of a small-car collision.

Narrator closes by giving a few facts taken from Australian hospital reports.

### Summary

Actual footage of Ford's testing was used to demonstrate the effects of usage and nonusage of safety belts on test dummies in accidents occurring in different ways.

### Definitions

1. Thirty degrees to the barrier: The majority of accidents occurring are frontal and angular crashes. Test barrier is turned 30 degrees to simulate an angular crash.
2. Classic deep bow: When an occupant wears only a lap belt, the force of the crash throws only the torso forward, resulting in a bowing motion.

### Possible Limitations of Film

Some viewers may find this film to be more technical than they feel is necessary.

### Preview or Review Questions

1. What happens when someone is *ejected* from a crashing car?
  - A. When anyone is ejected from the car, he or she runs the risk of plunging through the windshield, smashing into trees or rocks, scraping along the ground or the pavement, or getting run over by his own or another car.



2. Do you have to wear your safety belt if you are in the back seat of a car?

A. For your own safety—to prevent ejection—and for the safety of the other occupants, it is essential that you wear your safety belt even if riding in the back seat. During a crash, unbelted rear-seat passengers can be thrown into front-seat passengers and both can be seriously injured. One out of every five serious injuries results from occupant-to-occupant impact.

3. What does car design have to do with safety?

A. Improvements in structural design can increase the likelihood of surviving a crash.

Some improvements include: stronger doors, door frames and locks, collapsible steering columns for all vehicles, improved safety belt assemblies, dynamic testing of all child restraints.

4. Could any belted passenger have survived that roll-over?

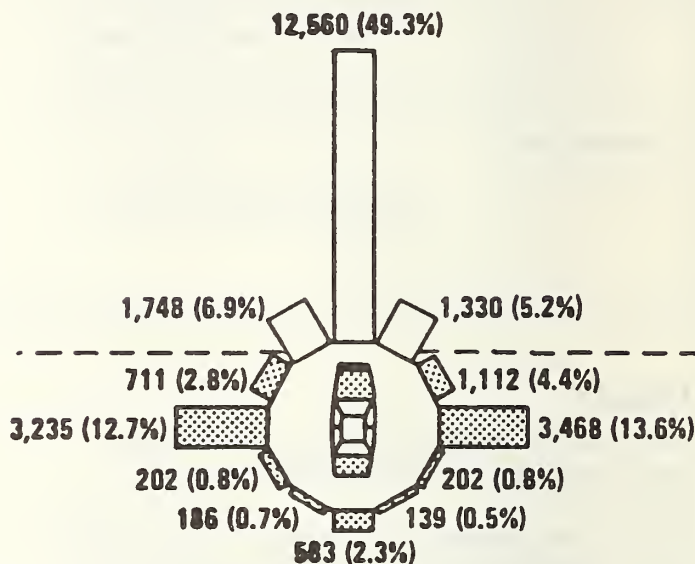
A. Yes; belted occupants would have been held in place during this crash, keeping them from hitting the hard surfaces of the interior of the car. The passenger compartment remained intact.

5. How are the cars controlled in the tests?

A. The cars, called test sleds, are remote-controlled.

### Did You Know

- That 60 percent of all fatalities occurred in frontal and regular crashes?



## “Are You Convinced”

### *Objective:*

- (1) To simulate the effectiveness of wearing safety belts, and
- (2) to dispel commonly held myths that are given as reasons for nonuse of safety belts.

### *Concept Best Illustrated:*

Myths and misconceptions related to the usage of safety belts.

### *Target*

#### *Audience:*

General public. Driver education classes

#### *Materials:*

16 mm sound projector, screen

#### *Running Time:*

5 minutes

### Abstract

Film begins with 3 slides of auto accidents. Narrator reads accident report indicating damage costs, extent of injuries, and comments regarding the use or nonuse of safety belts. The last car received extensive damage, but occupants were not injured because safety belts were in use at the time of accident. Narrator closes scene by giving statistics on the frequency of deaths and injuries caused by auto accidents.

Scene switches to safety belt demonstration site, where a young woman is on a machine called “the convincer.” Occupants strapped in their seat travel down a short ramp at 10 mph and are stopped suddenly at the bottom of the ramp.

Commonly held myths are expressed by four people in the following sequences. Those include the beliefs that safety belts cause injury, that it is better to be thrown clear, and that good drivers don’t have accidents. After expressing their particular beliefs (myths), each individual takes a ride in the convincer at 10 mph.

Narrator closes by showing slides of injuries taken from records at an Australian hospital and giving statistics pointing out a reduction in injuries after passage of mandatory usage law; and, finally, showing a slide of an auto whose windshield has been broken on the passenger side. Comments: “The driver was wearing his seat belt. His wife was not.”

### Summary

Objective #1 (effectiveness) is met by presenting statistical and graphic evidence of what happens when safety belts are not worn.

Objective #2 (myths) is met by voicing myths and giving facts that counter these myths while showing nonusers in the convincer.

### Definition

The Convincer: A machine designed to give people a sense of what it feels like to be in a low-speed (7–10 mph) crash.

### Possible Limitations of Film

The lack of comparison, i.e., what would happen to an unbelted occupant in the convincer, may cause the viewer to be less than convinced. This film should be used along with other films that give a realistic demonstration or what happens in a crash, e.g., “Dynamics of a Crash,” “Safety Belts and You.”

### Preview or Review Questions

1. How serious an injury can anyone receive going as slow as 12 mph?

A. Fatal accidents have occurred at speeds of less than 12 mph.

2. Do safety belts have to be worn at all times or only on long distances?

A. Safety belts should be worn at all times in order to be effective. As stated in the film, three out of four accidents occur within 25 miles of home at speeds as low as 12 mph.

3. Isn’t it safer to be unbuckled so that you can be ejected?

A. Film stated that (1) the chances of death are at least five times greater if thrown from the car (note: other estimates suggest that this risk may be as much as 25 times greater), (2) the chances of escape are better if you are still conscious at the time of the accident; and (3) if the belt is properly fastened around the pelvic area with shoulder belt crossing middle of chest, the chances of injury from the safety belts are greatly reduced.

4. Have safety belt usage laws made a difference in countries where they were passed?

A. Where the results of these laws were measured; usage rate went from 20–25 percent before passage to 60–90 percent after passage. It was found that where public information and education were used along with vigorous enforcement, usage was higher and fatality and injury rates were lower.

5. Couldn't I just brace myself in low-speed accidents?

A. Adequately bracing yourself with arms or legs is almost never possible, because collisions happen too fast. The car takes  $\frac{1}{10}$  of a second to stop, while the human takes only  $\frac{1}{1000}$  of a second. Even if there is time to brace yourself, the forces (several thousand pounds of force) involved in most collisions are too great to withstand, even at moderate speeds.

6. Will safety belts allow you to walk away from a crash?

A. In some very severe collisions, no restraints will be effective in preventing injury. High-speed and severe side collisions where there is intrusion of another vehicle into the passenger compartment are examples. But the

majority of fatal injuries occur in frontal and angle collisions at speeds of less than 35 mph. About 17,000 lives would be saved each year if all drivers and passengers in the U.S. wore their safety belts on every trip.

7. Are safety belts more dangerous than they're worth?

A. Study after study confirms that one is better off belted, and better off by a wide margin, even allowing for the relatively infrequent possibility that the belt may itself cause injury.

### Did You Know

- That the accident rate is much greater on city streets than on highways?
- That in countries with mandatory safety belt usage laws, safety belt usage has gone from 20–80 percent, and injury and death has dropped at least 20 percent?
- That in 1982 only about 12 percent of the American driving public use a safety belts?
- That present large-car drivers are the least frequent wearers of safety belts.



## “Safety Belts: Fact and Fiction”

*Objective:* To increase knowledge about the lifesaving benefits of safety belts.

*Concept Best Illustrated:* Dynamics of the crash, myths and misconceptions, and the effectiveness of safety belts.

*Target Audience:* General public

*Materials:* Slide projector, Cassette tape, recorder

*Running Time:* 10 minutes

### Abstract

This colorful, animated slide projection personalizes statistics to help viewers realize their vulnerability and responsibility to make a change. It addresses the myths about being able to brace oneself, being ejected, and the need for belt usage on short trips. Common fears expressed regarding entrapment or safety belt inflicted injuries are discussed. A final analogy is made of safety belts and a life insurance policy, where the only investment necessary is 2 seconds of time.

### Summary

This slide presentation deals with most of the main issues regarding safety belt and child restraint usage. As such it can most effectively be used as a final review item after various films have been used (i.e., in previous session).

### Possible Limitations of Film

As a slide show, it lacks some of the dynamics of the films in the package. It can best be used following the films.

### Audience Follow-up Activities

Suggest that individuals use their personal influence to encourage others to use safety belts. In social situations, when the subject arises, they should share with others the facts they have learned from this presentation.

### Preview or Review Questions

1. Why do manufacturers go to such expense and trouble to immobilize the contents of the packages they ship? What do they do to achieve this?

A. They want their products to arrive at their destinations undamaged. People are delicate contents of automobiles. Cars are steel containers in which people can be easily hurt. The purpose of safety belts is to prevent people from becoming free-floating objects in a crash and from striking against the inside of the car.

2. Why is it that the accident rates are higher on city streets than they are on turnpikes and freeways?

A. Freeway driving is high-tension driving. Thus, people tend to be more attentive. Also, there is less risk because of less interactive traffic and fewer access roads. Public perception of risk is greater on freeways because of the high speeds involved.

3. Why is it that when I test my safety belt to see if it catches, it keeps right on moving? How can I be sure it will work if I'm in a crash?

A. Safety belts are activated in different ways. Some are belt-sensitive; that is, when they are jerked very suddenly, the emergency locking device is activated. The other type is car-sensitive. In a collision, a pendulum located in the body of the car, tips and causes the safety belt to lock.

### Did You Know

- That lap and shoulder belts have been standard equipment in the front seats of cars since 1968?
- That one out of every five serious injuries to passengers results from occupant-to-occupant impact?
- That a common cause of death and injury to children in automobiles is being crushed by adults who are not wearing safety belts?



## “Child Restraints”

<i>Objective:</i>	To show what happens to children in a crash, how child seats and seat belts help, and how to use child restraints properly.	<i>Target Audience:</i>	Adults, parents
<i>Concept Best Illustrated:</i>	All of Above	<i>Materials:</i>	16 mm sound projector, screen
		<i>Running Time:</i>	3 minutes

### Abstract

The film opens showing children entering and riding in a car. This is followed by a sequence of live pictures and crash test footage that simulates a crash sequence and shows what happens to children inside a car when they are not restrained.

Two other sequences show children riding in the cargo area of a station wagon and a child held by an unbelted mother, respectively.

Footage is also shown of a properly restrained child (dummy) in a crash. Final scenes show different types of child restraints and how to use them.

### Summary

This film provides an excellent summary of the need for and types of child restraints. It should be most useful in brief educational programs.

### Did You Know

- That all auto child restraints manufactured after January 1, 1981 must pass tests which show that they can provide adequate protection for children in actual crashes. Look for a label on the restraint which states the date of manufacture.
- That seats vary in size and convenience features. Some harness adjustments are simpler than others. Some buckles are easier to open and some conversions to toddler position are easier than others. Some seats offer more freedom of movement and others may be narrow at the hip area. **TRY BEFORE YOU BUY!**
- That not all seats fit all cars or safety belt systems. First try your child in the seat—Then try the seat in your car. Buckle them in both front and back seats to test the fit of the belt and vehicle seat.

### Possible Limitations of Film

Briefly glosses over proper ways to use various car seat designs, tether use, compatibility issues, and differences in installation.

**NOTE:** This film contains material copyrighted by the Physicians for Automotive Safety, 50 Union Avenue, Irvington, NJ 07111. This copyrighted material may not be reproduced by nongovernmental sources without permission of the copyright holder.

### What is the New Government Standard?

The revised standard applies to all motor vehicle child protection devices MANUFACTURED after January 1, 1981 which are designed for children under 50 pounds. These devices must be dynamically tested, but non-crash-tested seats may still be sold until the supplies are exhausted. The revised standard (Federal Motor Vehicle Safety Standard #213) includes a number of new concepts, several of which are listed below.

It requires:

- that any child carrier (seat, bed, booster seat, etc.) be dynamically tested in a simulated 30 mph crash test. Limits are placed on allowable forces on the head and chest, and on movement of the test dummy. Also, the structural integrity of the device must be maintained.
- that devices which need a tether strap to pass the 30 mph test, must also pass a 20 mph “misuse” test without the tether anchored. Devices with an armrest or other object in front of the child must also pass the “misuse” tests at 20 mph with nothing but the armrest in place to “restrain” the dummy.
- a 12 lb. force to open harness buckles so that children cannot open them.
- labelling of the seat to show date of manufacture, basic use instructions, and warnings against misuse.





## “Children and Infants in Car Crashes”

<i>Objective:</i>	To demonstrate what happens to children when they are restrained and when they are not.	<i>Target Audience:</i>	General public, parents
<i>Concept Best Illustrated:</i>	Dynamics: What happens to children in a crash. Effectiveness of restraints for children.	<i>Materials:</i>	16 mm projector, screen
		<i>Running Time:</i>	5 minutes

### Abstract

This is a silent film with written descriptions of the collisions leading into the crash sequences. Most crashes are filmed from several different angles, first at regular speed, then in slow motion. (A red paint mark resembling blood is seen right after the dummies make impact. This is used by scientists to record points of impact.)

Crash #1 shows a *lap-held infant* in the front seat of a sedan going 24 mph. Child and passenger both sustain head injuries, and the child is crushed by the adult.

Crash #2 shows an *unrestrained infant* in the front seat of a car going 25 mph. The baby is seen hurling into the dashboard.

Crash #3 shows an *unrestrained 3-year-old* on the front seat of a sedan. The child is thrown into the dash and windshield.

Crash #4 contrasts what happens when a *3-year-old is wearing lap and shoulder belts* in a similar crash. Child does not hit dashboard or windshield.

Crash #5 shows *lap-belted 3-year-old in the back seat*. Child does a very deep bow but does not collide with interior surfaces of the car.

Crash #6 demonstrates what happens to *unrestrained 3- and 6-year-olds in the rear of a van* going 24 mph. Both children slide forward and collide with driver's seat and dash, and rebound onto the van floor.

Crash #7 concludes the film by showing 3- and 6-year-olds in the cargo area of a station wagon in a 30 mph collision. Two of the children are ejected after colliding with each other and the window frame. The two ejected children strike and fall into the path of the car that struck their car from the rear.

### Summary

Objective is met by showing typical seating arrangements for children and by demonstrating what happens to these children in a collision. It contrasts the simulated tragedies with sequences of belted children in similar collisions.

### Possible Film Limitations

This film does not have a spoken narrative. Experience has shown that usually, however, this can be even more powerful than adding narration.

### Preview or Review Questions

1. Aren't small children more resilient and thus less likely to be injured in a collision?
  - A. The concept of resilience does not apply to the head or the internal organs. Children become flying missiles when they are unrestrained during a collision.
2. How can parents ensure the safety of their children?
  - A. The leading cause of death among children ages 1-4 is automobile accidents. Parents and other adults as well should see to it that children are buckled up at all times. The safest position is in the middle of the back seat. If the child weighs less than 40 pounds, a special, dynamically tested child restraint should be properly used. If no seat is available, a safety belt is much better than no restraint at all.
3. How effective are child restraints?
  - A. Child restraints used in a crash reduce serious injuries by 50-70 percent. Of every 100 children who died in motor vehicle crashes, 80 would be alive today if their parents had buckled them up.

4. How does a parent know when to move a child up to an adult belt?

A. When a child weighs more than 40 pounds or when the head is 3 inches above the back of the car seat, it is time to move the child from the child seat to an adult belt.

### **Audience Follow-up Activities**

Suggest that individuals investigate starting a child restraint loan program in their community or nursery school.

A complete description of how to establish a loan program can be found in the booklet entitled, “Early Rider Loan-A-Seat.” It can be obtained by writing the National Highway Traffic Safety Administration, Office of Occupant Protection, NTS-10, 400 7th Street, S.W., Washington, D.C. 20590.

The pamphlet, “Child Safety Seats for Your Automobile,” is available at that same address. It describes how to use and install various types of child restraints.

### **Did You Know**

- That 77 percent of all injuries to children in car accidents are injuries to the head, causing brain damage, permanent disfigurement, epilepsy, or death?
- That in a 30-mph collision a 10-pound child held by a belted adult would be wrenched from the adult’s arms—with 300 pounds of force?
- That because their heads are proportionately heavier than an adult’s head, children tend to fly headfirst into the windshield or collide headfirst with objects in the car?
- That children are more likely to be injured or ejected when traveling unrestrained in the cargo section of wagons or hatchbacks?

## “Chilsafe”

<i>Objective:</i>	To impress upon parents the necessity of using crash protection for their children.	<i>Target Audience:</i>	Parents
<i>Concept Best Illustrated:</i>	Effectiveness of and proper use and selection of child restraints.	<i>Materials:</i>	Slide projector, cassette tape, recorder
		<i>Running Time:</i>	12 minutes

### Abstract

In this presentation a mother and father discuss what they deem to be a very important responsibility for parents—providing infant and child crash protection.

As they talk, they touch on the dynamics of the crash—i.e., the forces and speed involved in a collision.

They discuss the best ways to give the children protection by describing several types of child restraints, from infant seats to child safety seats, or regular safety belts for children weighing more than 40 pounds. Different ages require different protection.

As the infant grows into a toddler, more attention must be given to teaching acceptance of being restrained. The parents discuss this and give a few statistics to justify their recommendation for firmness when riding in the car.

The main message is that child passenger safety should begin at the birth of a couple's first child.

### Summary

The narrative is very effective in communicating what happens in a crash and what can and should be done about child and infant protection.

### Possible Limitations of Film

Like “Safety Belts: Fact and Fiction,” this slide presentation lacks the dynamics available in a film. However, it is effective and accurate in its message. Perhaps it can be best used following the “Children and Infants in Car Crash” film.

“Safety Belts: Fact and Fiction” can provide information about safety belts in general.

### Preview or Review Questions

1. What is the leading cause of death and injury to children?
  - A. The leading cause of death for children ages 1–4 is motor vehicle accidents. “Children are 40 to 50 times more likely to die by motor vehicle accidents than by preventable diseases.”
2. What is a dynamically tested car seat?
  - A. A dynamically tested car seat is one whose design has been crash tested for safety in a collision of at least 30 mph.
3. Aren't the seats terribly uncomfortable?
  - A. Children soon become accustomed to being restrained while riding in the car. The seats themselves are comfortable and since many of them are raised, children are able to see out of the windows while riding.
4. Why does the *infant* ride backwards in an infant seat?
  - A. An infant rides backwards so that in an accident, the baby's back, rather than its delicate chest and abdomen, absorbs the crash forces.
5. A newborn is so tiny. Won't the infant suffer skeletal damage by being put into a child seat?
  - A. There are special infant carriers that support the baby's back and head adequately. For a very tiny baby, blankets can be used to fill the empty spaces and cradle the baby within the seat.
6. How do you select and install child restraints?
  - A. A child restraint should suit parent's needs, fit the child, and fit into the family car. It should be clearly stated that the seat has been *dynamically* tested.

Points to be considered: (a) size of your child, (b) automotive safety belts that will accommodate the restraint, (c) out-of-car vision for the child, (d) tether requirements, and (e) frequency of moving restraints from car to car.



### **Audience Follow-up Activities**

Suggest that individuals investigate starting a child restraint loan program in their community or nursery school.

A complete description of how to establish a loan program can be found in the booklet entitled "Early Rider Loan-A-Seat." It can be obtained by writing the National Highway Traffic Safety Administration, Office of Occupant Protection, NTS-10, 400 7th Street, S.W., Washington, D.C. 20590. The pamphlet, "Child Safety Seats for Your Automobile," is available at the same address. It describes how to use and install various types of child restraints.

### **Did You Know**

- That at present rates (1982), 1 out of every 60 infants born today will die in a traffic accident?
- That of every 100 children who died in motor vehicle crashes, 80 would be alive today if their parents had buckled them up?
- That safely constructed child restraints can greatly reduce the probability of death in the event of a crash?
- That all child restraints manufactured after January 1, 1981, must perform adequately in dynamic crash tests at 30 mph?

## “Otto The Auto—Buckle-Up”

<i>Objective:</i>	To interest and educate young elementary school age children on the importance of using safety belts.	<i>Target Audience:</i>	Pre-school to fourth grade students.
<i>Concept Best Illustrated:</i>	Effectiveness of safety belt use (helps to prevent a person from hitting someone else and from hitting objects in the car).	<i>Materials:</i>	16 mm sound projector, screen
		<i>Running Time:</i>	5 minutes

### Abstract

This is an animated color film in which a young girl realizes the importance of using safety belts every time she travels in an automobile. Otto, the talking car, talks to her and convinces her to buckle-up. They go for a short ride and arrive at a rocket launching center to watch a space ship take off for a quick orbit into outer space. She wishes she could go and her wish is granted. She has to buckle-up, however, and learns a great deal about why she should always use safety belts.

### Possible Limitation of Film

This film should be followed with specific learning activities on safety belt use. Examples of some activities are presented in the NHTSA K-6 Safety Belt Activity Book and in the American Seat Belt Council's "3 Seconds to Safety" instructional program. A general discussion should at least follow the film that focuses on protective packaging concepts. Ask questions about the similarities between people in cars and what a person does or does not do when storing or mailing fragile Christmas tree ornaments. Ask why farmers do not package fresh eggs in metal and glass containers and what makes the egg cartons that you see in the store more practical.

To maximize this learning experience, parents should be given a safety belt presentation during parent-teacher meetings.

Please tell students that safety belts should always be worn as low as possible and across the hips.

### Sources for Related Instructional Materials

Inquires concerning the availability of these materials should be sent to respective sources.

### K-6 Safety Belt Activity Book

This is a guide for teachers of grades K-6. It consists of illustrated instructions for 20 elementary school student group activities. It may be used in special projects or easily adapted to supplement lessons in reading, writing, art, music, social studies, or safety.

U.S. Department of Transportation  
National Highway Traffic Safety Administration  
Office of Occupant Protection, NTS-10  
Washington, D.C. 20590

### “3 Seconds to Safety”

This is a reading program about safety belts for students in grades three to six. The program contains a poster, six lesson plans, and reproducible student activity sheets.

American Seat Belt Council  
1730 Pennsylvania Avenue, N.W.  
Suite 460  
Washington, D.C. 20006

### The Adventures of Beltman

A passenger and pedestrian safety program for K-3 grade children. This program covers the major points young children should learn and practice for in-car safety, such as, sitting quietly while riding, buckling up in the back seat, using the shoulder belt when tall enough, locking the doors, keeping hands or arms inside, and always getting in and out of the car on the curbside. The pedestrian portion of the program instills traffic safety behavior, attitudes, and skills during the “imprinting” years, and covers hazardous situations found to be high

frequency injury and fatality producing situations. Cost (\$100) at time of this printing.

F.L.I. Learning Systems, Inc.  
P.O. Box 2233  
Princeton, NJ 08540  
Tele. (609) 466-9000

### **Buckle-Up Box**

A passenger safety program for K-2 grade children. The program is based on interrelated simulation and real

world activities, rewarded and reinforced, during a school week. Each kit box contains sufficient materials for a class of 30 students. These include safety belts; sound sheets; flip chart; mobile; buckle-up books; reward stickers; evaluation card; and buckle upper awards. Cost (\$20) at time of this printing.

Media Intensive Learning Corporation  
1623 South Lamar  
Austin, TX 78704  
Tele. (512) 444-6734

## “Lucky 13”

<i>Objective:</i>	To educate and interest young children in the importance of wearing safety belts.	<i>Target Audience:</i>	Second to eight grade students.
<i>Concept Best Illustrated:</i>	Safety Belts prevent injuries.	<i>Materials:</i>	16 mm sound projector, screen
		<i>Running Time:</i>	15 minutes

### Abstract

This is an entertaining and educational story about a test dummy named “Lucky 13” who has mistakenly been scheduled for a 40 mph crash test without safety belts. Lucky 13 is a special hybrid (Alpha generation) anthropomorphic test device wired with emotions as well as transducers and normally is buckled-up in crash tests. The mistake causes Lucky great distress as lab technicians lift him into the test vehicle. Lucky’s friends and buddy’s back at the lab are sympathetic, particularly those who ride unrestrained as evidenced by missing arms and legs, slashes in arms and skulls, and some dislocated electronic hardware.

As Lucky’s test vehicle is about to crash, he comes alive and steers off the test track. He pauses briefly to buckle

his safety belt before taking off down the road to evade his would be captors.

In the subsequent scenes as Lucky evades the lab technicians and future captors, subtle facts and figures about the need to wear safety belts, as well as portrayals of safety belt use are shown.

In the end, when Lucky is captured, the scene returns to the same crash test where it had been interrupted. Lucky’s car smashes into the other test vehicle, bodies fly, glass breaks, and tires screech. As the dust clears the chief lab technician admonishes his peers for having buckled Lucky’s safety belt (“Who’s the dummy that buckled his safety belt?”) because the hero is safe and sound behind the steering wheel.





## “Do You Buckle-Up?”

<i>Objective:</i>	(1) to present convincing arguments in support of using safety belts and,	<i>Target Audience:</i>	4-9th grade students
	(2) to dispel commonly held myths and excuses people give for not using safety belts.	<i>Materials:</i>	16 mm sound movie projector, screen and blackboard.
<i>Concept Best Illustrated:</i>	Myths and misconceptions related to the non-usage of safety belts.	<i>Running Time:</i>	8 minutes

### Abstract

- Peer characters provide for student identification,
- Demonstrates the tremendous forces unleashed in a 10 mph collision,
- Illustrates the proper use of safety belts,
- Demonstrates the results of not wearing safety belts by showing emergency room X-rays and,
- Attacks several common myths or excuses people make for not wearing their safety belts such as:

### The Myths

#### Myth

“If I wear a safety belt, I might be trapped in a burning or submerged car!”

#### Fact

“Less than one-half of one percent of all injury-producing collisions involve fire or submersion. But if fire or submersion does occur, wearing a safety belt can save your life. If you’re involved in a crash without your safety belt, you might be stunned or knocked unconscious by striking the interior of the car. Then your chances of getting out of a burning or submerged car would be far less. You’re better off wearing a safety belt at all times in a car. With safety belts, you’re more likely to be unhurt, alert, and capable of escaping quickly.”

“I don’t want to be trapped in by a safety belt. It’s better to be thrown free in an accident.”

“Well, I only need to wear them when I have to go on long trips, or at high speeds.”

“Being thrown free is 25 times more dangerous . . . 25 times more lethal. If you’re wearing your belt you’re far more likely to be conscious after an accident . . . to free yourself and help your passengers. Safety belts can keep you from:

- plunging through the windshield
- being thrown out the door and hurtled through the air
- scraping along the ground
- being crushed by your own car

In almost any collision, you’re better off being held inside the car by safety belts

“Eighty percent of deaths and serious injuries occur in cars traveling under 40 miles per hour and 75 percent of deaths or injuries occur less than 25 miles from your home.”

### Teacher Emphasis

Before showing the film ask students for the reasons to wear and not to wear their safety belts. List on the blackboard under columns entitled-PRO and CON. After showing the film, discuss these pros and cons based on what was learned from the film. Discuss student experiences that highlight the importance of wearing safety belts.





# Print Materials

## Safety Belts

### **How Many of These Fairy Tales Have You Told?**

(Discusses the excuses most often given for not using safety belts.)

DOT-HS-802-152

(3-1/2 × 9-1/8—2 color—  
8 page fold out)

### **Encouraging Employees to Use Safety Belts**

(Suggests how an employer can promote safety belt use in his organization.)

DOT-HS-802-158

(6 × 9—2 color—30 pages)

### **Safety Belt Message**

(Discusses the safety belt facts through a series of questions and answers. Directed to driver education students.)

DOT-HS-802-156

(3-1/2 × 9"—black and  
white—28 pages)

### **The Automobile Safety Belt Fact Book**

(Discusses the effectiveness of safety belts and child safety seats and how the systems work. A good comprehensive coverage of the issues involved.)

DOT-HS-802-157

(Revised May 1982)  
(8-1/2 × 11"—2 color—  
22 pages)

### **Safety Belts: A History Lesson for Adults**

(An easy to read, witty discussion of safety belts covering effectiveness, how they work, why they should be worn, and the excuses given for not using them.)

DOT-HS-806-175

(4 × 9"—2 color—8 page  
fold out)

### **Safety Belt Fact Sheet**

(Contains: facts, myths, information on effectiveness and annotated diagram on how belts work. See sample in Appendix.)

No Number

(8-1/2 × 11"—black and  
white—1 page—Print on both  
sides)

### **Safety Belt Activity Book**

(A guide to teachers of grades K-6 for instructing their students on the value of safety belts.)

DOT-HS-802-153

(8 × 10-1/4—3 color  
cover—60 pages, w/large  
color-in wall poster)

### **Employer Guidelines for Safety Belt Programs**

(Discusses the benefits of safety belt use programs. Also contains recommended use policies, employee incentives, educational activities, and public information programs.)

No Number

(available in August 1983)

## Child Car Safety Seats

### **Early Rider Loan-A-Seat Book**

(Discusses how to establish child car safety seat loan programs.)

DOT-HS-805-060

(8-1/2 × 11"—2 color  
cover—40 pages)

### **Early Rider Educational Curriculum**

(Discusses the health professional's role in encouraging the use of child car safety seats and provides some practical guides for such a program.)

DOT-HS-805-060

(8-1/2 × 11"—2 color  
cover—28 pages)

### **Child Safety Seats for Your Automobile**

(Discusses why the seats are needed, kinds available, how to use and select them, and where they can be purchased.)

DOT-HS-805-174

(4 × 9"—red and white—  
18 pages)

### **Myths & Facts About Child Car Safety**

(Discusses reasons for using child car safety seats.)

DOT-HS-806-046(c)

(As Revised)  
(5 × 7"—4 color—6 page  
fold out)

## Posters

### **Safety Belt Poster / Get It Together**

No Number  
(16 × 20"—3 color)

### **Child Safety Seat Poster / Baby-Sitter**

No Number  
(11 × 17"—4 color)

### **Child Safety Seat Poster / Myths & Facts**

DOT-HS-806-046(a)  
(16 × 23"—4 color)

### **Child Safety Seat Poster / Safer Than A Mother's Arms**

DOT-HS-806(b)  
(17 × 20"—4 color)

Individual copies of print materials can be obtained from the National Traffic Safety Administration (NHTSA). Negatives are available for loan from NHTSA, NHTSA Regional Offices, or State Highway Safety Agencies to organizations wishing to reproduce materials for large safety belt use programs or general distribution. For Regional Office addresses, see the next page.

Small quantities of these and other printed materials may be available from State Highway Safety Agencies or the NHTSA Regional Office. The NHTSA Regional Office serving your State can put you in touch with your own State Highway Safety Agency.

## NHTSA REGIONAL OFFICES

<i>Region / States</i>	<i>Region Address</i>	<i>Telephone</i>
<b>REGION I</b> (Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont)	NHTSA Regional Administrator Transportation System Center Kendall Square Code 903 Cambridge, MA 02142	(617) 494-2680
<b>REGION II</b> (New Jersey, New York, Puerto Rico and Virgin Islands)	NHTSA Regional Administrator Room 204 222 Mamaroneck Avenue White Plains, NY 10605	(914) 683-9690 Ext. 311, 312, 313, 314
<b>REGION III</b> (Delaware, District of Columbia, Maryland, Pennsylvania, Virginia, and West Virginia)	NHTSA Regional Administrator Airport Plaza Building 793 Elkridge Landing Road Linthicum, MD 21090	(301) 962-3877
<b>REGION IV</b> (Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, and Tennessee)	NHTSA Regional Administrator Suite 501 1720 Peachtree Road, N.W. Atlanta, GA 30309	(301) 881-4537
<b>REGION V</b> (Illinois, Indiana, Michigan, Minnesota, Ohio, and Wisconsin)	NHTSA Regional Administrator Suite 214, Executive Plaza 1010 Dixie Highway Chicago Heights, IL 60411	(312) 756-1950
<b>REGION VI</b> (Arkansas, Louisiana, New Mexico, Oklahoma, and Texas)	NHTSA Regional Administrator 819 Taylor Street, Room 11A26 Fort Worth, TX 76102	(817) 334-3653
<b>REGION VII</b> (Iowa, Kansas, Missouri, and Nebraska)	NHTSA Regional Administrator P.O. Box 19515 Kansas City, MO 64141	(816) 926-7887
<b>REGION VIII</b> (Colorado, Montana, North Dakota, South Dakota, Utah, and Wyoming)	NHTSA Regional Administrator 555 Zang Street, 1st Floor Denver, CO 80228	(303) 234-3253
<b>REGION IX</b> (American Samoa, Arizona, California, Guam, Hawaii, and Nevada)	NHTSA Regional Administrator Two Embarcadero Center Suite 610 San Francisco, CA 94111	(415) 556-6415
<b>REGION X</b> (Alaska, Idaho, Oregon, and Washington)	NHTSA Regional Administrator 3140 Federal Building 915 Second Avenue Seattle, WA 98174	(206) 442-5934

NOTE: Each Regional Office has a safety belt coordinator.





# Safety Belt Fact Sheet

## The Facts

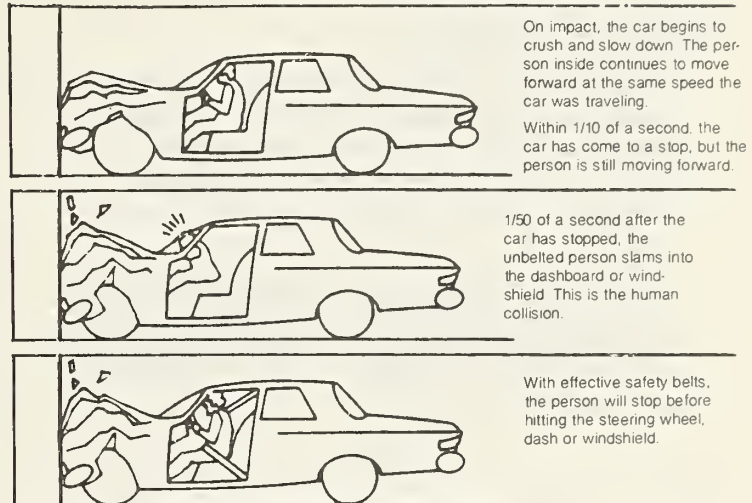
### Approximately 50,000 Fatalities Caused by Motor Vehicle Accidents Annually

- Leading cause of death among people 44 and younger.
- Number 1 cause of off-the-job fatalities; one of the leading causes of on-the-job deaths.
- Costs the average employer nearly \$120,000 per employee death.
- Comparable to the number of American soldiers killed in Vietnam.
- Two and one half times greater than all fatalities caused by accidents in the home.
- Ten times greater than fatalities caused by all other forms of transportation.
- Equivalent to a 727 passenger jet crashing every day.

## Safety Belts Make A Difference

- Approximately 35,000 people die annually in cars, light trucks or vans equipped with safety belts.
- About 50 percent (17,000) of these people could be saved if they wore safety belts.
- Safety belts cut your chances of being killed or seriously maimed in a crash by more than 50 percent.
- On any single vehicular trip the chance of an accident is very low; but the possibility of a serious accident on one of the many trips in your lifetime is better than 30 percent. (What percent of your friends have never been in an accident? Ask around . . . the percentage will be low.)
- Three out of four crashes happen within 25 miles of home.
- A common cause of death and injury to children in automobiles is being crushed by adults who are not wearing safety belts. In fact, one out of four serious injuries to passengers is caused by occupants being thrown into each other.
- Drivers wearing safety belts have more control over their car in emergency situations and are therefore more likely to avoid an accident.

## The Human Collision



The car has come to a complete stop within one tenth of a second. However, the unbelted driver is still moving along inside the car at 30 mph. It will take the driver about one-fiftieth of a second more to hit something—say the windshield or the steering wheel. That's the human collision. It happens about 0.02 seconds after the first collision, and belts can make a big difference in determining how serious that second collision is. A lot of people think they are strong enough to brace themselves in a crash. They aren't. At just 30 mph you'd be thrown toward the dash with the same force as if you'd jumped head first off a three-story building. No one's arms are anywhere near strong enough to "catch" himself and break a three-story fall. Safety belts are, through. And that's why people need them, even in a low-speed crash.

## How Effective are Safety Belts?

Most people accept the fact that wearing safety belts offers protection in a crash, but too few bother to find out exactly how much protection they can expect. If they asked, they would probably be surprised by the answer. While researchers may differ by a few percentage points either way, average figures coming out of safety belt studies look like this:

- Safety belts cut the number of moderate-to-severe injuries received by more than 60 percent.
- Safety belts cut fatalities by more than 50 percent.

To put these figures in other words, not wearing a safety belt doubles your chance of being hurt seriously in a crash. Serious injuries received in crashes often involve the head or spinal cord. In fact, in the U.S., auto accidents are the number one cause of epilepsy (from head injury) and paraplegia (from damage to the spinal cord). The restraining action of safety belts—especially shoulder belts—helps explain why they so drastically reduce the likelihood of being seriously hurt.

The aim of safety belts is to:

- First, maximize whatever benefits come from the First Collision through “riding down.” By making the impact of the first collision work on you sooner, belts give you the benefit of increased stopping distance and dissipation of the forces of impact by the car itself.
- Second, minimize the harm of the Second Collision. By taking the forces of impact quickly (but not too quickly), the belts dissipate those forces

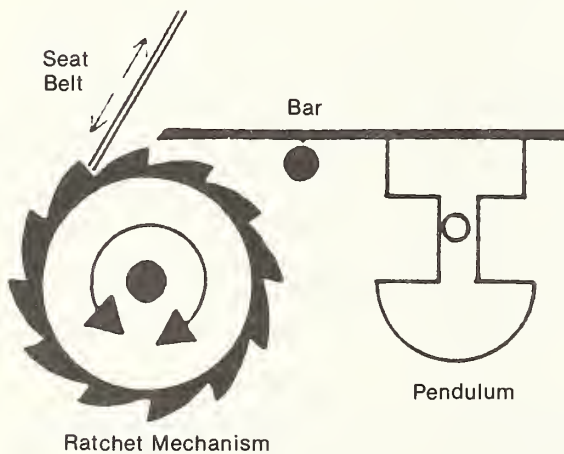
through a relatively safe medium (the belt itself) instead of through a dangerous medium (glass or steel).

Safety belts help occupants in six ways:

1. There is the “*ride down*” benefit, in which the belt begins to stop the wearer as the car is stopping.
2. The belt keeps the *head and face* of the wearer from striking objects like the wheel rim, windshield, interior post, or dashboard,
3. The belt *spreads the stopping force* widely across the strong parts of the body.
4. Belts prevent vehicle occupants from *colliding with each other*.
5. Belts help the driver to *maintain* vehicle control, thus decreasing the possibility of an additional collision.
6. Belts keep occupants from being *ejected*.

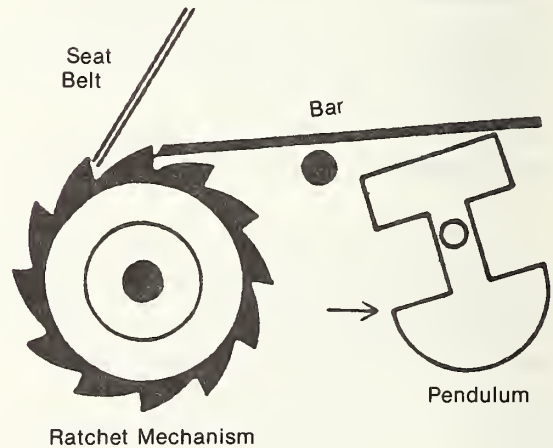
## The Safety Belt: How It Works

Normal Conditions



Under normal conditions, the pendulum and bar are in their rest positions. The reel, which holds the belt, is free to rotate. As the occupant moves forward the belt moves unrestrained with the occupant.

Emergency Conditions



Under emergency conditions, such as in a collision, the pendulum moves forward under the force of the impact causing the bar to engage the ratchet. The reel and seat belt now lock in place and the occupant is held firmly in place.

# The Myths

## Myth

"I don't need safety belts because I'm a really good driver. I have excellent reactions."

"I don't want to be trapped in by a safety belt. It's better to be thrown free in an accident."

"If I wear a safety belt, I might be trapped in a burning or submerged car!"

## Fact

"No matter how good a driver you are, you can't control the other car. When another car comes at you, it may be the result of mechanical failure and there's no way to protect yourself against someone else's poor judgement and bad driving."

"Being thrown free is 25 times more dangerous . . . 25 times more lethal. If you're wearing your belt you're far more likely to be conscious after an accident . . . to free yourself and help your passengers. Safety belts can keep you from:

- plunging through the windshield
- being thrown out the door and hurtled through the air
- scraping along the ground
- being crushed by your own car

In almost any collision, you're better off being held inside the car by safety belts

"Less than one-half of one percent of all injury-producing collisions involve fire or submersion. But if fire or submersion does occur, wearing a safety belt can save your life. If you're involved in a crash without your safety belt, you might be stunned or knocked unconscious by striking the interior of the car. Then your chances of getting out of a burning or submerged car would be far less. You're better off wearing a safety belt at all times in a car. With safety belts, you're more likely to be unhurt, alert, and capable of escaping quickly."

## Myth

"I don't need it. In case of an accident, I can brace myself with my hands."

"Most people would be offended if I asked them to put on a seat belt in my car."

"I just don't believe it will ever happen to me."

"Well, I only need to wear them when I have to go on long trips, or at high speeds."

"I can touch my head to the dashboard when I'm wearing my seat belt so there's no way it can help me in a car accident."

## Fact

"At 35 miles per hour, the force of impact on you and your passengers is brutal. There's no way your arms and legs can brace you against that kind of collision. The speed and force are just too great. The force of impact at just 10 mph is equivalent to the force of catching a 200-pound bag of cement from a first story window."

"Polls show that the overwhelming majority of passengers would even willingly put their own belts on if only you, the driver, would ask them."

"Everyone of us can expect to be in a crash once every ten years. For one out of 20 of us, it'll be a serious crash. For one out of every 60 children born today, it will be fatal."

"Eighty percent of deaths and serious injuries occur in cars traveling under 40 miles per hour and 75 percent of deaths or injuries occur less than 25 miles from your home."

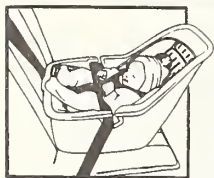
Safety belts were designed to allow you to move freely in your car. They were also designed with a latching device that locks the safety belt in place if your car should come to a sudden halt. This latching device keeps you from hitting the inside of the car or being ejected. It's there when you need it."



# Types of Safety Seats

Child safety seats come in several shapes and sizes because different stages of a small child's development require different types of protection. So parents have several considerations to keep in mind when selecting a safety seat. There is no "best" seat. The important thing is to find the seat that best suits you, your child, and your car.

## Infant Carriers



Up until they weigh about twenty pounds, new-borns require a carrier which is a tub-shaped bed that cradles the child in a semi-erect position. The infant is held securely in the carrier by means of a harness. Infant carriers are designed to face the rear of the car and must be secured to the seat by the adult belts already in the car. Accident data show that the rear seat is generally safer than the front seat. However,

many parents alone in the car with their baby feel uncomfortable placing an infant in the rear seat facing to the rear where they cannot see the child. Since the rear-facing infant carrier is designed to protect the baby's head from the dashboard and windshield, the front seat is a suitable alternative. It is most important, however, that infant carriers never be used facing the front of the car. For a very small infant, it may be more comfortable to roll up small blankets or towels and place them inside the carrier at the sides of the infant's body.

## Convertible Models



Convertible Model

Some models of infant carriers convert to child seats so that they can be used from birth until the child weighs about forty pounds. For economic reasons, a convertible model may be a sound choice, since there is no need to buy a second seat when the child outgrows the infant mode.

If you decide to buy a convertible model, there are several points to consider. Some infant seats that convert to child seats require a top tether strap that must be secured to the rear seat belt if used in the front

seat (see diagram). To use this type of seat in the rear seat requires that a hole be drilled in the rear window shelf. Correctly-used tether straps add extra stability to seats and often these are the seats that allow the least amount of movement in a crash. However, if you do not intend to drill the hole for the anchor bracket and attach the tether strap every time you place the seat in the car, do not buy this type of seat. There are convertible models that do not require a tether strap.

Proper Tether Use



Attached to Rear Seat Belt



Attached to Rear Window Shelf

## Toddler Seats

Shield



For children who weigh more than twenty pounds and can sit up by themselves, there are two types of child seats. The shield type consists of a seat with a padded and slightly flexible impact shield that comes up close to the child's stomach and then bends away from his face and chest. The safety seat itself is held securely in place by an adult lap belt which is fastened around the shield. An advantage of this type of restraint is that parents do not have any harnesses or buckles to deal with. Children can learn to climb in behind some shield models with the seat already secured in place. However, children can also climb out of the shield while the car is moving, therefore, this type should only be used with well-behaved and disciplined children.

The harness type secures the child to the safety seat with a five-part belt system. This type of seat may be more complicated to use than the shield type but they are harder for an active child to wiggle out of and may allow for more freedom of movement within the seat. Some of the newer models of safety seats secure the child with a combination of shield and harness.

It is important to note whether or not the seat you choose requires a top tether strap that must be secured to a rear seat belt or the window shelf behind the rear seat (or cargo area of station wagon or hatchback). Again, if you do not intend to anchor the tether strap everytime you place the seat in a car, choose a model that does not require a top tether.



Harness

## Booster Seats



A new type of seat currently being marketed is the automobile booster seat. Booster seats are designed primarily to fill the gap between when a child outgrows the standard child safety seat and when the child can use the adult belt and still see out the window. Some models can also be used for smaller children, as small as twenty pounds, and all can be used for children up to about sixty-five pounds. It is extremely important to note that booster seats should only be used with upper torso support, either by using the lap and shoulder belt, or for maximum safety, by using the body harness supplied with the booster seat. The body harness is secured in the same manner as a standard top tether strap. A booster seat without upper torso support is less effective than using the adult lap belt without the booster.

## Adult Safety Belts

Adult safety belts should be used for children who have outgrown their safety seats or for children who can sit up by themselves when no safety seat is available. The belt should be snug and as low on the child's hips as possible. If the shoulder belt crosses the child's face or neck, the shoulder belt should be placed behind the child's back after the buckle has been fastened. Parents should check to make sure the child's head will not hit the dash in a crash or sudden stop. If this could happen, the child should be placed in the rear seat. If an emergency situation arises where there are more children than seat belts, two children can be secured within one belt.

Pillows or cushions should not be used to boost a child. They can slide out from under the child, allowing him or her to submarine under the lap belt, or allowing the child's head to move so far forward that it strikes the car's interior.





## THE SAFETY RESTRAINT QUIZ

The quiz is designed to be photocopied and handed out to groups that you speak to.

Before you give the quiz, make sure you are familiar with all the answers and with the other information materials that may be available. Your presentation will be much more effective if you can speak “off the cuff” on most of the questions, and your audience will be more easily drawn into the discussion.

Good reference sources are available from your governor’s highway safety representative at the state capitol. You may find helpful audio visuals available, also.

Give the quiz first. Let people take about 5 minutes to fill it out. Then follow with a hard-hitting film, slide show or discussion of the questions.

It’s important for you to keep several things in mind:

1. Safety belts are not perfect. They cannot save everyone in every conceivable crash. And they cannot guarantee that a person won’t suffer any injury. What they will do is *greatly* reduce the chances that a person will suffer a serious or fatal injury.
2. Many research studies have been conducted on the effectiveness of safety belts and child restraints in this and other countries. *Every one* has concluded that people are much safer when held in place by an appropriate restraint device.

That’s why safety belts are required in all cars . . . and in planes, amusement rides, etc. That’s why at least 20 state governments and a large number of businesses require employees to use safety belts when using a car on company business. And that’s why at least 23 nations require the use of safety belts in cars.

3. Don’t get flustered when someone in the audience claims to have survived a crash because he or she wasn’t wearing a safety belt or claims that a safety belt would have killed him or her.

There are so many crashes every day involving so many people that a number of people beat the odds and suffer no injuries. But in one year in Michigan a staggering 147,570 people were reported as injured while riding in motor

vehicles. Thousands more were injured in incidents not reported to the police. And 1,368 people were killed. Find out the figures for your state through the governor’s highway safety representative.

4. Rely on your audience for support. Don’t get involved in a long argument with a “doubter.” For every “doubter,” you’ll find 3 or 4 people who will admit that safety belts could have protected a friend, family member, or even themselves in a previous crash. Several people may offer examples of a life being saved by a safety belt or child restraint device. Once they have the facts, an audience can sell itself with a little guidance.
5. Even in the face of all the facts, however, some people will still resist. A common excuse will be “Safety belts are just too uncomfortable.” Ask these people if they enjoy having a tooth filled or pulled. Ask if they enjoy a regular visit to the doctor or look forward to medicine or minor surgery. Ask if they like flu shots. Ask if they like paying all their insurance premiums to protect their car, home, and life . . . and to cover major hospital bills. We all do things every day that we really don’t like to do . . . but we go ahead and do them because we know they’re important. Using safety belts is just as important, if not more so, as all these other things. And no one will charge you a penny for using a safety belt.

For that rare person who is unmoved by this argument, just suggest that they make certain their next car has comfortable safety belts.

When your presentation is finished, pass out any pamphlets you may have. These materials not only will reinforce the main points of the discussion, but also will serve as effective “pass alongs” for family and friends.

If anyone has questions about safety belts or child restraints which you cannot answer, you may suggest that they contact the governor’s highway safety office in your state. An alternative would be to record their name and question and promise to get back with an answer after you do some research.

## A Short Quiz on Safety Belts and Child Restraints

- |                            |                            |  |
|----------------------------|----------------------------|--|
| <input type="checkbox"/> T | <input type="checkbox"/> F | 1. Safety belts aren't necessary when taking short trips at low speeds.  |
| <input type="checkbox"/> T | <input type="checkbox"/> F | 2. About 80 per cent of all automobile accidents occur at speeds of less than 40 m.p.h.  |
| <input type="checkbox"/> T | <input type="checkbox"/> F | 3. The longer the trip, the more likely it is that people will use safety belts.   |
| <input type="checkbox"/> T | <input type="checkbox"/> F | 4. One in 10 injury-producing crashes involves fire or submersion in water.  |
| <input type="checkbox"/> T | <input type="checkbox"/> F | 5. In a crash, it's almost always safer to be thrown out of the car.   |
| <input type="checkbox"/> T | <input type="checkbox"/> F | 6. Safety belts should be fastened just above the hip bones (pelvis).  |
| <input type="checkbox"/> T | <input type="checkbox"/> F | 7. If people wear a lap belt, they don't need a shoulder belt, too.  |
| <input type="checkbox"/> T | <input type="checkbox"/> F | 8. If you have an adjustable shoulder belt, it should be kept <b>very</b> loose for the best protection.                       |
| <input type="checkbox"/> T | <input type="checkbox"/> F | 9. Drivers wearing lap and shoulder belts have more control over the car in emergency situations.                              |
| <input type="checkbox"/> T | <input type="checkbox"/> F | 10. Over 90 per cent of drivers think safety belts increase safety, but only 70 per cent wear them regularly.                  |
| <input type="checkbox"/> T | <input type="checkbox"/> F | 11. An adult's arms provide the best protection for a very small baby.   |
| <input type="checkbox"/> T | <input type="checkbox"/> F | 12. Pregnant women should not wear lap and shoulder belts.   |
| <input type="checkbox"/> T | <input type="checkbox"/> F | 13. Regular safety belts never should be worn by children under five years of age.   |
| <input type="checkbox"/> T | <input type="checkbox"/> F | 14. If the label on a child restraint device says it "meets or exceeds federal safety standards," it is a good one.            |
| <input type="checkbox"/> T | <input type="checkbox"/> F | 15. A common cause of death and injury to children in automobiles is being crushed by adults who are not wearing safety belts. |

**1. Safety belts aren't necessary when taking short trips at low speeds.**

*False.* Many people believe they are very safe when driving just to the store, the school, or to a friend's house. They do it all the time, and think nothing will ever happen. But a crash or collision **can** happen at any time or place. All it takes is one driver not paying attention, losing control, or taking an unnecessary risk. Three out of four crashes happen within 25 miles of home.

No one ever starts out in the morning expecting to be in a crash, but it does happen.

How many of you have had a "close call" in the last few weeks?

**2. About 80% of all automobile accidents occur at speeds of less than 40 m.p.h.**

*True.* Nearly 8 out of 10 crashes happen at speeds less than 40 m.p.h. That's largely because most driving is done at low speeds and in urban areas. Driving at low speed is no guarantee that you won't be hurt in a crash, however. People not wearing safety belts have been fatally injured in crashes at speeds as low as 12 m.p.h. That's about the speed you would be driving in a parking lot.

No matter how slow you might be driving or how far you might be going . . . you're a lot safer buckled up.

**3. The longer the trip, the more likely it is that people will use safety belts.**

*True.* People are more likely to use safety belts on long trips. They seem to think there is a greater risk of having an accident when driving far from home on unfamiliar roads. But the reverse is really true. Long trips, especially on freeways, tend to be safer. Everyone should wear belts on **all** trips, short or long.

**4. One in ten injury-producing crashes involves fire or submersion in water.**

*False.* If you watch television, you probably think cars explode and drop into rivers all the time. But that's just not what happens in real life. Less than one out of every 200 injury-producing crashes involves fire or submersion in water.

But suppose this does happen to you. Then a safety belt can save your life by keeping you unhurt, alert, and able to escape quickly.

Without a safety belt, you easily can be stunned or knocked unconscious in even a minor crash. Then how will you escape?

**5. In a crash, it's almost always safer to be thrown out of the car.**

*False.* The fact is that your chances of being fatally injured are almost 25 times greater if you're thrown from the car than if you are safely buckled to your seat.

Why? Because it's not easy to get out of the car. You have to go through the windshield or the side windows . . . and that's going to hurt! Once you are out of the car and sailing through the air, you face your next problem . . . your landing spot. But without wings, you really don't have a choice.

So how will safety belts help you? They will hold you snugly in your seat so that you don't

- plunge through the windshield;
- smash into trees or rocks or other cars;
- scrape along the ground or the pavement; or
- get run over by your own or another car.

**6. Safety belts should be fastened just above the hip bones.**

*False.* A lap belt is designed to be worn as **low as possible across the hip bones**, so these strong bones can absorb safely the forces of a crash. If the belt is fastened above the hip bones . . . across the abdomen . . . it could cause injury to soft tissue and organs in a severe crash.



**7. If people wear a lap belt, they don't need a shoulder belt, too.**

*False.* The purpose of a shoulder belt is to keep your upper torso from jackknifing forward in a collision and hitting the dashboard or the steering wheel with your chest and face. A lap belt will hold you in your seat and save your life, but the shoulder belt can prevent some very painful and disfiguring injuries.

Never wear a shoulder belt by itself. You will slide **under** it in a crash and suffer serious injury. The combination of lap and shoulder belts working together provides the greatest protection in a crash.

**8. If you have an adjustable shoulder belt, it should be kept very loose for the best protection.**

*False.* Cars manufactured after 1974 are equipped with combination lap-shoulder belts which are self-adjusting. But if you have an older model vehicle, your shoulder belt probably must be adjusted separately. It should be slightly loose . . . allowing you to put your clenched fist between the belt and your chest. This will give you some freedom of movement in the car, yet will be snug enough to prevent your upper body from hitting the steering wheel or the dashboard.

**9. Drivers wearing lap and shoulder belts have more control over the car in emergency situations.**

*True.* If you have to swerve suddenly to avoid a crash, your safety belts will hold you in your seat so that you can concentrate on steering. Without belts, it is likely you could be thrown out of your seat or at least slide so far that you could not keep control of the car. Ever hear of a race car driver who doesn't use safety belts? In fact, professional racing associations **require** the use of safety belts by all drivers, just like they require helmets and other safety devices.

**10. Over 90% of drivers think safety belts increase safety, but only 70% wear them regularly.**

*False.* More than 90% of all motorists **do** believe that safety belts are a good idea in one or more situations. In practice, however, only about 11% of drivers can be observed wearing their belts. Of children who ride in motor vehicles, barely 8% are restrained in any way. (1982 data)

**11. An adult's arms provide the best protection for a very small baby.**

*False.* In only a 30 m.p.h. crash, a 15-pound baby can suddenly weigh as much as 450 pounds. No matter how strong you are or how much warning you have, there is no way in the world you can hold on to a baby in a crash. If this happens, the baby will hit the dashboard with the force of a fall from a three story building. Then, if you don't have on your safety belts, **you will crash into the child.** The only way to protect a small baby from injury in a crash or even a sudden stop or swerve is to carry it in a specially designed infant car seat.

**12. Pregnant women should not wear lap and shoulder belts.**

*False.* The greatest cause of fetal death in auto accidents is death of the mother, so her survival must take priority. A lap belt worn below the "Bulge" and a shoulder belt above, to prevent jackknifing, will give both mother and fetus the best chance of surviving a serious accident.

**13. Regular safety belts never should be worn by children under five years of age.**

*False.* This was a little tricky because many people have heard that safety belts can be dangerous to young children. Well, young children **always** are safer if they can ride in a special child restraint device that will spread the forces of a crash over a wide body area. But if such a restraint device is not available, then a safety belt is much better than being unrestrained. Just make certain the lap belt is as snug as possible and is positioned low on the hip bones.



**14. If the label on a child Safety seat device says it “meets or exceeds all federal safety standards,” it is a good one.**

*True.* Since January 1, 1981, the federal standard governing child safety seats has required dynamic testing. This limits forces placed on the child’s body and ensures the safety of the structure of the child safety seat. All seats that meet this standard can be considered good ones.

Some safety seats manufactured prior to January 1, 1981 can meet these requirements, while others cannot.

Your best guide to finding a safely constructed child restraint device is to consult any of the current “Shopping Guides” available from many of the State Highway Safety Agencies, the American Academy of Pediatrics, or the National Child Passenger Safety Association. These Shopping Guides list all the restraints currently in production which give satisfactory performance in a dynamic test.

**15. A common cause of death and injury to children in automobiles is being crushed by adults who are not wearing safety belts.**

*True.* This is something about which most people have never thought. When they try to visualize a crash, they see a car hit something head-on and the people lurch forward. In real life, however, cars collide at all angles and the passengers are thrown in every conceivable direction . . . unless they are safely buckled-up and anchored to the vehicle seat. **One out of every four** serious injuries occurring to passengers of motor vehicles is caused by people being thrown into each other.

The most common causes of death and injury to children in automobile crashes are:

- being thrown into the windshield, dashboard, or some other part of the vehicle;
- being crushed by adults who are not wearing safety belts; and
- being thrown out of the car.

# Where To Obtain Audiovisual Materials

Any inquiries relative to this guide can be forwarded to the following address:

Office of Occupant Protection  
NHTSA/NTS-10  
U.S. Department of Transportation  
400 7th Street, S.W.  
Washington, D.C. 20590  
(202) 426-9294

Inquiries relative to individual audiovisual items should be sent to the following sources:

1. "Dynamics of a Crash" (Excerpt from "Crashes That Need Not Kill") and
2. "Children and Infants in Car Crashes" (TV version) are available from:

Insurance Institute for Highway Safety  
600 New Hampshire Avenue, N.W. S300  
Washington, D.C. 20037  
Contact: Ms. Diane Schwartz  
(202) 333-0770

3. "Safety Belts Save Lives"

Chrysler Corporation  
Automobile Safety Relations  
P.O. Box 1919  
Detroit, Michigan 48288  
Contact: C. M. Kennedy  
(313) 956-3953

4. "Are You Convinced?" and

5. "Do You Buckle-Up?"

FLI Learning Systems, Inc.  
P.O. Box 2233  
Princeton, N.J. 08540  
Contact: Grey Jones  
(609) 921-2020 or 466-9000

6. "Safety Belts and You"

Ford Motor Company  
Room 988  
American Road  
Dearborn, Michigan 48121  
Contact: John Manikas  
(313) 322-9172

7. "Safety Belts: Fact and Fiction"

National Audio Visual Center  
General Services Administration  
Order Section  
Washington, D.C. 20409  
Contact: Order Section  
(202) 736-1891

8. "Childsafe"

National Safety Council  
444 North Michigan Avenue  
Chicago, Illinois 60611  
Contact: Dr. Christy Hughes  
(312) 527-4800

9. "Egg," "Pumpkin" and "Headache" (formerly used as public service announcements),

10. "Child Restraints,"

11. "Risk,"

12. "Rediscover the Safety Belt," and

13. "Luck 13"

Office of Occupant Protection  
NHTSA/NTS-10  
400 7th Street, S.W.  
Washington, D.C. 20590  
Contact: Program Specialist  
(202) 426-9294

14. "Otto the Auto"

AAA Foundation for Traffic Safety  
8111 Gatehouse Road  
Falls Church, VA 22047  
Contact: Order Department  
(703) 222-6891

## Where Current Child Safety Seat Shopping Guides May be Obtained

1. State Highway Safety Office (call appropriate NHTSA Regional Office—see page PM-3 in this guide—for telephone number and address)
2. American Academy of Pediatrics  
Division of Public Education  
1801 Hinman Avenue  
Evanston, IL 60204
3. National Child Passenger Safety Association  
P.O. Box 841  
Ardmore, PA 19003

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